



SOT-23 SURFACE MOUNT ASSEMBLY LED LAMP

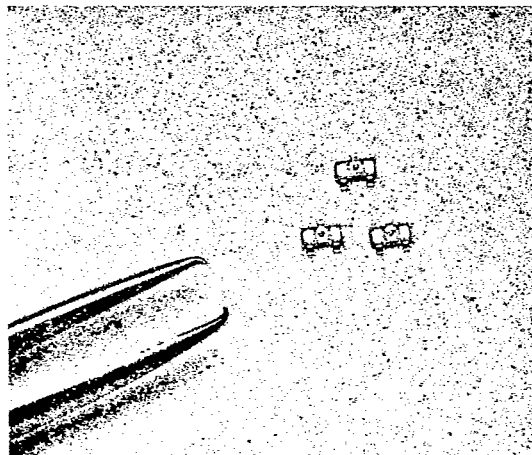
LTL-907PK/907LK/907EK

FEATURES

- MICROMINIATURE PACKAGE LED LAMP.
- SURFACE MOUNT ASSEMBLY LAMP.
- SINGLE CHIP.
- HIGH EFFICIENCY/LOWER POWER CONSUMPTION.
- LONG LIFE SOLID STATE RELIABILITY.

DESCRIPTION

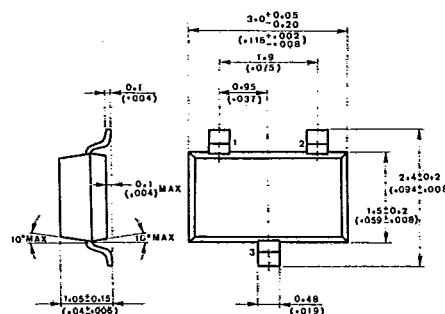
The LTL-907 series are clear non-diffused epoxy microminiature package for surface mount assembly. LTL-907PK is Gallium Phosphide on Gallium Phosphide Red Light Emitting Diode. LTL-907LK is Gallium Phosphide on Gallium Phosphide Green Light Emitting Diode. LTL-907FK is Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.



DEVICES

PART NO. LTL-	LENS		SOURCE COLOR
	COLOR	DIFFUSION	
907PK	Water Clear	Non-diffused	Bright Red
907LK	Water Clear	Non-diffused	Green
907EK	Water Clear	Non-diffused	Orange

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

PIN NO.	LTL-907PK LTL-907LK LTL-907EK
1	N.C.
2	Anode
3	Cathode

ABSOLUTE MAXIMUM RATINGS AT $T_A = 25^\circ\text{C}$

PARAMETER	BRIGHT RED	GREEN	ORANGE	UNIT
Power Dissipation	40	100	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	60	120	120	mA
Continuous Forward Current	15	30	30	mA
Derating Linear From 25°C	0.2	0.4	0.4	$\text{mA}/^\circ\text{C}$
Reverse Voltage	5	5	5	V
Operating Temperature Range	-55°C to $+100^\circ\text{C}$			
Storage Temperature Range	-55°C to $+100^\circ\text{C}$			
Lead Soldering Temperature (1.6mm (0.063in) From Body)	260°C for 5 Seconds			

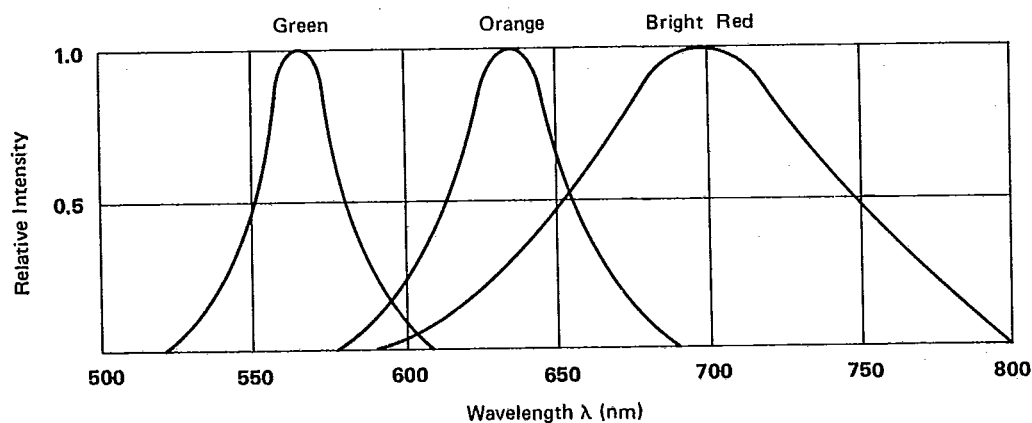


FIG. 1 RELATIVE INTENSITY VS. WAVELENGTH

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTL	MIN	TYP	MAX	UNIT	TEST CONDITION
Luminous Intensity	I_v	907PK	0.5	1.7		mcd	$I_F = 20\text{mA}$ Note 1.
Viewing Angle	$2\theta_{1/2}$	907PK		140		deg.	Note 2 (Fig. 6)
Peak Emission Wavelength	λ_{PEAK}			697		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	$\Delta\lambda$			90		nm	
Forward Voltage	V_F			2.1	2.8	V	$I_F = 20\text{mA}$
Reverse Current	I_R				100	μA	$V_R = 5\text{V}$
Capacitance	C			55		PF	$V_F = 0$ $f = 1\text{MHz}$

NOTES: 1. Luminous Intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

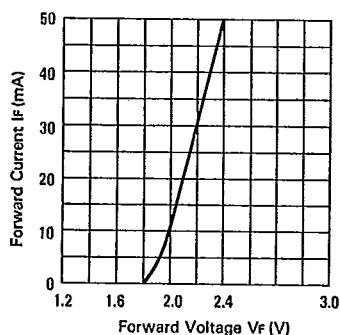


FIG. 2 FORWARD CURRENT VS. FORWARD VOLTAGE.

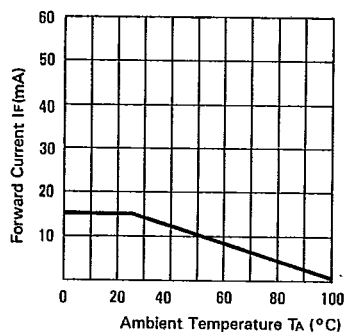


FIG. 3 FORWARD CURRENT DERATING CURVE.

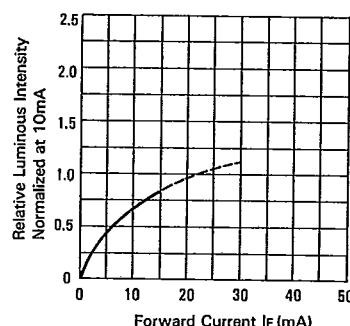


FIG. 4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

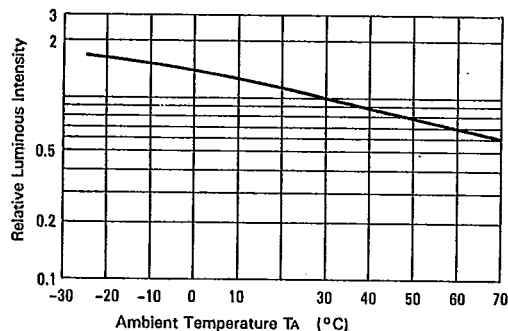


FIG. 5 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

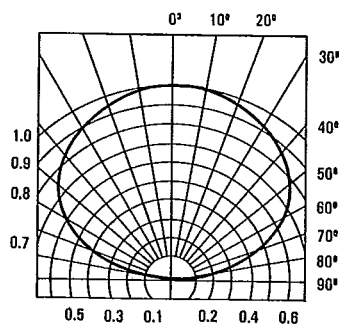


FIG. 6 SPATIAL DISTRIBUTION

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTL-	MIN	TYP	MAX	UNIT	TEST CONDITION
Luminous Intensity	I_V	907LK	0.6	2.0		mcd	$I_F = 20\text{mA}$ Note 1
Viewing Angle	$2\theta_{1/2}$	907LK		140		deg.	Note 2 (Fig. 11)
Peak Emission Wavelength	λ_{PEAK}			565		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	$\Delta\lambda$			30		nm	
Forward Voltage	V_F			2.1	2.8	V	$I_F = 20\text{mA}$
Reverse Current	I_R				100	μA	$V_R = 5\text{V}$
Capacitance	C			35		PF	$V_F = 0$ $f = 1\text{MHz}$

NOTES: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

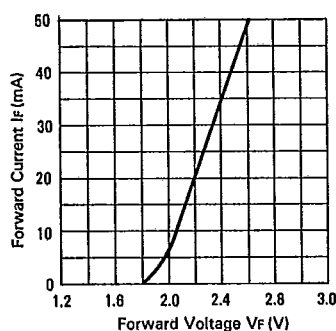


FIG. 7 FORWARD CURRENT VS. FORWARD VOLTAGE.

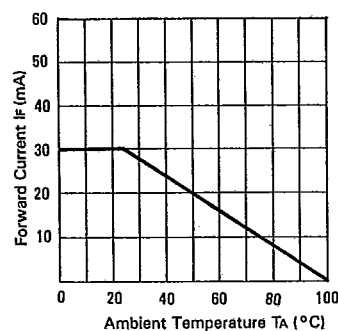


FIG. 8 FORWARD CURRENT DERATING CURVE.

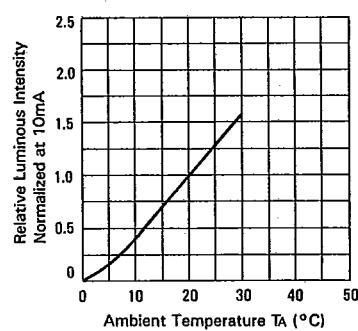


FIG. 9 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT.

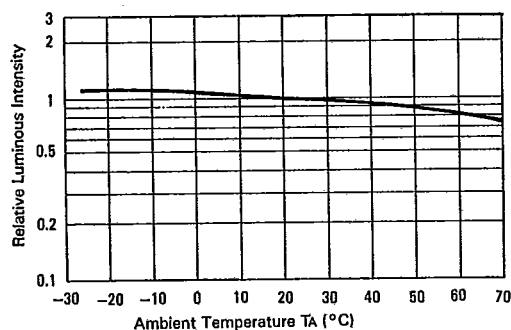


FIG. 10 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

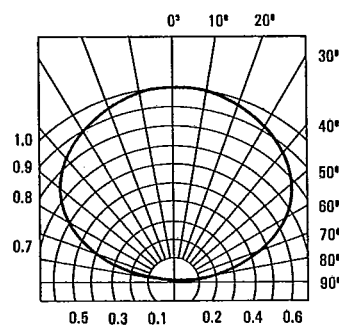


FIG. 11 SPATIAL DISTRIBUTION

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTL-	MIN	TYP	MAX	UNIT	TEST CONDITION
Luminous Intensity	I_v	907EK	0.6	2.0		mcd	$I_F = 20\text{mA}$ Note 1
Viewing Angle	$2\theta_{1/2}$	907EK		140		deg.	Note 2 (Fig. 16)
Peak Emission Wavelength	λ_{PEAK}			630		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	$\Delta\lambda$			40		nm	
Forward Voltage	V_F			2.0	2.8	V	$I_F = 20\text{mA}$
Reverse Current	I_R				100	μA	$V_R = 5\text{V}$
Capacitance	C			20		PF	$V_F = 0$ $f = 1\text{MHz}$

NOTES: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.
2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

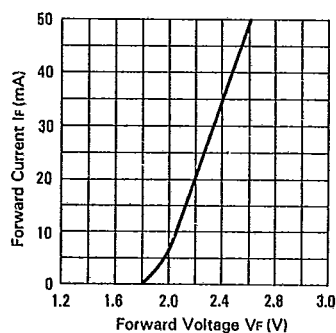


FIG. 12 FORWARD CURRENT VS. FORWARD VOLTAGE.

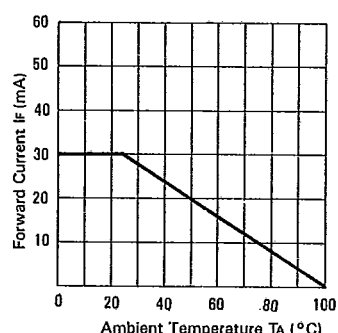


FIG. 13 FORWARD CURRENT DERATING CURVE.

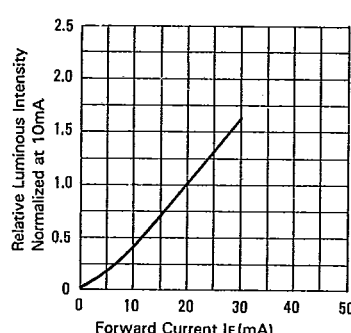


FIG. 14 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT.

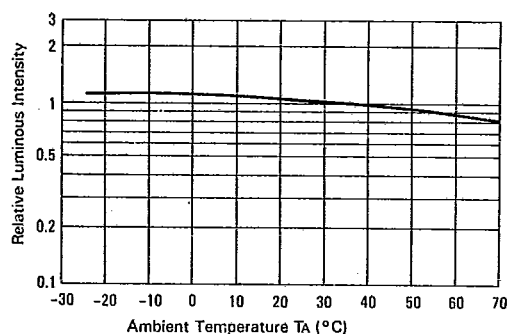


FIG. 15 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

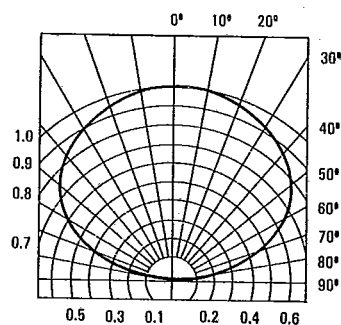


FIG. 16 SPATIAL DISTRIBUTION